COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
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Francis L. Daniel
Regional Director

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Owens-Brockway Glass Container, Inc.
150 Industrial Boulevard
Toano, Virginia 23168
Permit No.: TRO-60923

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Owens Brockway has applied for a Title V Operating Permit for its Glass Container facility, located in Toano, Virginia. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: Yen T Bao Date: 8/10/10
Yen T. Bao (757) 518-2195

Air Permit Manager: Date: 8/10/10.
Jane A. Workman

Regional Director: Francis L. Daniel Date: 8/10/10
Francis L. Daniel

Attachment A: Annual update for 2008.
Attachment B: minor NSR permit of March 5, 2004.
Attachment C: minor NSR permit of April 12, 2005.

FACILITY INFORMATION

Permittee
Mr. Charles A. Cochrane
Plant Manager
Owens-Brockway Glass Container Inc.
150 Industrial Boulevard
Toano, Virginia 23168

Facility
Owens-Brockway Glass Container Inc.
150 Industrial Boulevard
Toano, Virginia 23168

County-Plant ID No. 51-095-00022

SOURCE DESCRIPTION

NAICS: 327213 - Manufacture of glass bottle containers.

This source includes processes of Raw Material and Cullet Receiving and Storage, Raw Material Blending and Mixing, Glass Melting Furnaces, Glass Forming, Final Bottle Treatment and Packaging. Raw Materials are received by truck and rail, stockpiled in several storage areas and strategically conveyed to process silos. Raw materials include cullet (post-consumer recycled glass), sand, salt cake, limestone and soda ash. The raw materials are fed in various amounts from the silos to make a batch for the furnaces.

The batch is produced from the various silo components through conveying, weighing on the scales, then mixing and transporting to the mixed batch storage bin. The furnaces are fed from this storage bin during the melting process. Furnaces A and B melt the batch using primarily natural gas with electrical boosting available. Each furnace has attached a refiner and a forehearth that require natural gas for heating. The refiner is employed to heat condition the molten glass in preparation for delivery to the forming process. The forehearths transport the refined glass to the forming process. Bottle forming machines shape the refined glass where it is sheared, gobbed and placed in a prepared mold. Emissions from the burning of natural gas at the refiners, the forehearths and the lehrs is minimal and is vented inside the plant, so these emission units have been moved to the insignificant list in the permit.

The facility has just recently (2004) installed an Electrostatic precipitator (ESP-1) to control particulate emissions from the glass melting furnaces. The result of this retrofit to the furnaces has reduced PM and PM10 (filterable) emissions by more than 90%. Recent stack testing established the nominal emission rate for each furnace as 1.6 lbs of particulate per ton of glass produced. The ESP has a vendor guarantee for control down to 0.2 lbs of particulate per ton of glass pull.

The molded glass containers are treated in the hot end surface treatment (HEST) process using Monobutyl tin trichloride (MBTT) as a fine spray mist. Overspray of the mist is vented from the exhaust hoods to the atmosphere. The MBTT actually reacts on the surface of the glass to form a tin oxide coating. From there the molded bottles are annealed in the lehrs which are heated with natural gas.

The facility is a Title V major source for its emissions of Nitrogen Oxides, Sulfur Dioxide and PM10. This source is located in a non-attainment area for ozone. The facility was permitted under a Minor NSR Permit issued on March 5, 2004 and the HEST system was permitted on April 12, 2005.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

The facility is currently in compliance with all permit requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD) and ID	Pollutant Controlled	Permit Date
Fuel Burning Equipment						
1-A	S-1	Furnace A	51.9 mmBtu/hour	Electrostatic precipitator; ESP-1	PM, PM10	3/5/2004
1-B	S-2	Furnace B	51.9 mmBtu/hour	Electrostatic precipitator; ESP-1	PM, PM10	3/5/2004
Other Equipment						
6	S-5	HEST – Hot End Surface Treatment	2 lbs MBTT per hour per hood (4 hoods)	N/A	N/A	4/12/2005

EMISSIONS INVENTORY

A copy of the 2008 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

2008 Actual Emissions

	Criteria Pollutant Emission in Tons/Year				
Emission Unit	VOC	CO	SO_2	PM-10	NO_x
Plant	7.0	4.9	267.3	23.2	458.9
Total	7.0	4.9	267.3	23.2	458.9

2008 Facility Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emissions in Tons/Year
Non VOC/Non PM HAPs	1.3

EMISSION UNIT APPLICABLE REQUIREMENTS – Glass Container Production Plant

Limitations

Following are limitations from the existing New Source Review permit issued March 5, 2004:

Condition 3: describes the control technology for particulate emissions from the glass furnaces.
Condition 4: control of fugitive emissions and fugitive dust.
Condition 8: establishes the glass production limit for each furnace.
Condition 9: Approved fuels.
Condition 10: sets the emission limits for glass melting furnace, unit 1-A.
Condition 11: sets the emission limits for glass melting furnace, unit 1-B.
Condition 12: emission limits for the ESP control unit.
Condition 13: visible emission limit for the ESP control unit.
Condition 27: procedures to prevent violation of a primary ambient air quality standard.

Monitoring

Following are monitoring requirements from the existing New Source Review permit issued March 5, 2004.

Condition 5: monitoring devices (ESP and NOx CEMS) and operating requirements.
Condition 6: observation of the monitoring devices (ESP).
Condition 7: describes the procedure for Visible Emissions Monitoring at the ESP stack. The frequency of visual evaluation of the ESP stack has been increased from monthly to weekly in Condition III.B.3 to meet the periodic monitoring requirements of 40 CFR 70.6(a)(3)(B).
Condition 19: requirements for the NOx CEMs.
Condition 20: CEMs performance evaluations.
Condition 21: CEMs quality control program

Note that there are no monitoring requirements for SO_2, CO and VOC as they are deemed not necessary. Those emissions are uncontrolled. SO_2 is produced from the sulfur-containing compounds in the glass raw material formulations (e.g. sulfates). CO and VOC emissions are from the combustion of natural gas fuel for the furnace, and the amounts are relatively small. The permitted emission limits were derived from an old stack test in 2001; for SO_2, the emission factor was 3.9 lb SO_2/ton. The initial performance test in July 2004 gave lower emission factors; for SO_2, the results were 2.6-2.9 lbs/ton. Therefore, emissions are not expected to exceed the permit limits as long as the throughput limit of 105,850 tons/yr is not exceeded.

Reports and Notifications

Following are notification requirements from the existing New Source Review permit issued March 5, 2004:

Condition 22: reports for CEMs.
Condition 29: conditions where the permit may be suspended or revoked.
Condition 26: notifying the DEQ about facility or control equipment malfunctions.
Condition 25: notifying DEQ for control equipment maintenance.
Condition 31: registration update.

Recordkeeping

Following are recordkeeping requirements from the existing NSR permit issued March 5, 2004.

Condition 16: recordkeeping requirements.

Testing

Following are testing requirements from the existing NSR permit, issued March 5, 2004.

Condition 17: Test Ports for testing.

Initial Performance Testing has been completed.

Note that there are no periodic testing requirements for PM, SO_2, CO and VOC as they are deemed not necessary. The justification for the cases of SO_2, CO and VOC are as discussed above under monitoring. For PM which is controlled by ESP, the monitoring requirements and proper maintenance should ensure performance of the control equipment and compliance with the emission limits. Moreover, the permit requires weekly visible emission monitoring of the ESP stack which should indicate that the ESP is performing as expected or corrective action must be taken. Testing can always be requested by DEQ if there is evidence that the ESP performance has declined. According to inspection reports since 2007, facility's monitoring records have indicated that no opacity was observed at the ESP stack, and during the 2009 inspection, the inspector saw no opacity.

General Conditions

Condition 24: right of entry to facility; General Condition.
Condition 30: requirements for transfer of ownership; existing permit.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80: New Source Standard for Visible Emissions

Streamlined Requirements

Conditions 14 and 15: initial performance tests.
Condition 18: Initial Notifications. The installation and operation of the ESP has been confirmed.
Condition 23: Permit Invalidation. The ESP has been constructed.
Condition 32: permit copy on premises does not apply to Title V permitting.

EMISSION UNIT APPLICABLE REQUIREMENTS – Hot End Surface Treatment [Unit Ref.# 6]

Limitations

Following are limitations from the existing NSR permit, issued April 12, 2005:

Condition 3: describes the control technology for VOC and MBTT.
Condition 4: establishes throughput limit for MBTT at the HEST equipment.
Conditions 5 and 6: limits for criteria pollutant emissions and HCl emissions (state only req'mt.)
Condition 7: visible emissions limit.
Condition 11: violation of ambient air quality standard.

Condition 13: revoking and/or suspending permits; General Condition.
Condition 9: entry requirements for regulating authorities, General Condition.
Condition 15: registration update; General Condition.

Recordkeeping

Following are recordkeeping requirements from the existing NSR permit, issued April 129, 2005.

Conditions 8: recordkeeping requirements.

Notifications and Reporting

Following are notification requirements from the existing NSR permit issued April 12, 2005.

Condition 10: notification for facility or control equipment malfunction.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5-50-80: New Source Standard for Visible Emissions

Streamlined Requirements

There were no streamlined conditions.

INAPPLICABLE REQUIREMENTS

The following requirements which have been specifically identified as being not applicable to this permitted facility.

Citation	Title of Citation	Description of Applicability
40 CFR 60 Subpart CC	Standards of Performance for Glass Manufacturing Plants	Glass melting furnaces constructed or modified after 6/15/1979
40 CFR 63 Subpart SSSSSS	National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources	Facilities with one or more continuous furnaces to produce glass that contains compounds of one or more glass manufacturing metal HAP (arsenic, cadmium, chromium, lead, manganese and nickel) as raw materials in a glass manufacturing batch formulation

The first air permit for the glass melting furnaces at the facility was dated 2/24/78; therefore, they must have been constructed before 6/15/1979. The permit was superseded on 3/05/2004 mainly due to the addition of an ESP for the control of particulate emissions; there is no change in the capacity of the furnaces. The change does not meet the definition of "modification" in 40 CFR 60.2. Therefore, NSPS Subpart CC does not apply.

The facility's furnaces may operate as "continuous furnaces" as defined in 40 CFR 63.11459. However, no raw materials containing glass manufacturing metal HAPs are used in the formulations at the facility. Therefore, MACT Subpart SSSSSS does not apply.

RENEWAL OF TITLE V PERMIT, ISSUED AUGUST 7, 2005.

The Title V permit for Owens-Brockway Glass Container Inc. will expire August 7, 2010. This renewal permit will replace the existing Title V permit on the expiration date. The Title V permit application was received on February 3, 2010, so it was considered timely on receipt. The application contained a statement on the applicability of CAM to the facility. CAM is an essential factor in assuring that adequate monitoring is applied to any facility that is subject to the Title V permit program. It was determined from the latest look at the Toano plant, that CAM no longer applies to the glass melting furnaces for particulate emissions. Based on the latest stack test from 2001 and the switch to 100% natural gas firing, the maximum emissions from each furnace are now approximately 85 tons per year. This maximum is below the 100 ton threshold for CAM applicability. Unless there are other reasons, unknown at this time, the Toano facility has qualified to be exempt from CAM, based on the fuel change and installation of the ESP.

The Toano furnaces remain major sources of NOx and SO2, and the facility is major for particulate when the emissions from both furnaces are aggregated. The PTE for each furnace at 85 tons is below the CAM threshold for individual emission units. The 2004 NSR permit shows PM10 emission levels at 72 tons for each furnace and to be measured at the outlet of the ESP. The reason for this is that the control equipment had not been manufactured at the time the NSR permit was issued. For this reason a control efficiency of zero (0 %) was applied in the permit, and therefore the outlet emissions were set at 72 tons for each furnace. Now that the ESP has been installed, a vendor guarantee outlet concentration of 0.2 lbs of particulate (filterable) can be applied. This calculation yields actual PM10 emissions in the range of 10 tons per furnace. Therefore the ESP outlet emissions are also below the CAM threshold, so CAM is unnecessary.

PUBLIC PARTICIPATION

Draft permit will be placed at public notice in The Daily Press from June 4, 2010 through July 6. 2010.

DEQ

VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

RECEIVED – DEQ
APR 2 9 2009
Tidewater Regional Office

TIDEWATER REGION – 2008 EMISSION STATEMENT

Facility Name	**Owens-Brockway Glass Container Inc.**		**Registration No 60923**
Facility Location	**150 Industrial Blvd. Toano, VA 23168**	**Primary SIC Code: 3221**	**Facility County or City: James City County**
Contact Person	**Tony Lyons**		**Phone (757) 566-2423**
Mailing Address	**150 Industrial Blvd. Toano, VA 23168**		
Email	**tony.lyons@us.o-i.com**		**For Agency Use Only**

2008 FACILITY SUMMARY – POLLUTANT TOTALS

FACILITY TOTAL – Sum emissions from attached pages.
If annual total of NOx or VOC is 25 tons or more, provide annual totals & ozone season daily totals.
If you have a Title V permit, provide annual totals for VOC, NOx, SO2, PM-10, Pb, TRS, TNMOC and Total non-VOC, non-PM10 HAPS.
If you choose not to address CO, PM-2.5 or ammonia, DEQ will develop, where appropriate, estimates using federal factors (AP-42 or FIRE)

($ = Fee Pollutant)	ANNUAL	OZONE SEASON (June 1- Aug 31)
TOTAL CO EMISSIONS (optional)	4.9 Tons/Yr	NA
TOTAL NH3 EMISSIONS (optional)	0.0 Tons/Yr	NA
TOTAL NOx EMISSIONS $	458.9 Tons/Yr	2,545.4 Lb/Operating Day
TOTAL Pb EMISSIONS $	0.0 Tons/Yr	NA
TOTAL "Primary" PM-10 EMISSIONS (Primary = filterable + condensable PM-10) $	23.2 Tons/Yr	NA
TOTAL "Primary" PM-2.5 EMISSIONS (optional)	21.4 Tons/Yr	NA
TOTAL SO2 EMISSIONS $	267.3 Tons/Yr	NA
TOTAL TRS EMISSIONS $	0.0 Tons/Yr	NA
TOTAL VOC EMISSIONS $	7.0 Tons/Yr	39.5 Lb/Operating Day
TOTAL TNMOC EMISSIONS (Landfills Only) $	N/A Tons/Yr	NA
TOTAL Non-VOC/Non-PM HAP EMISSIONS $	1.3 Tons/Yr	NA

Attach: (a) Annual Update, (b) Completed Option I, II forms and/or Spreadsheet,
(c) Document Certification signed by qualified individual, (d) Any required supporting documentation for emission calculations (See instructions), e) Emission factor change form for each emission factor that you want to change.

Owens-Brockway Glass Container Inc. - Toano, VA plant - 2008 Emission Statement

Note. Pay fees on pollutants underlined & bold	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl	2nd HAP non-VOC non-PM10	TRS	CO *	LANDFILL TNMOC	Pb	NH3 *	HAP non-VOC non-PM10
FACILITY TOTALS (ton/yr) =	21.4	23.2	267.3	458.9	7.0	1.3		0.0	4.9	0.0	0.0	0.0	
		Ozone Totals (lb/day)		2,545.4	39.5								

Instructional comments are attached to cells with red corners. After 1st year, you may only need to update thruputs (yellow cells). & maybe ozone thruputs & days (blue cells).

* Where appropriate, DEQ will develop estimates for PM-2.5, CO and ammonia using federal emission factors (AP-42 or Fire) if the facility chooses not to address them.

14 FURNACE 'A'	Tons of Glass Produced	1	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	30501402	ORIGIN OF Emission Factor	AP-42 (3)	ST (2)	ST	CEMS	ST				ST		S.T. - Other (1)	(4)	
POINT=	20	Emission Factor	1.35	1.45	2.9		0.003				0.03		0.00169		
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	97,806	AVG. Control Efficiency (%)	84.0%	84.0%									84.0%		
		BASIS for control efficiency													
Ozone Season Thruput=|	25,740	EMISSIONS (tons/yr)	10.6	11.4	141.8	194.6	0.1	0.0		0.0	1.5	0.0	0.0	0.0	
Ozone Operating Days=|	92	*Emissions (Lb/Ozone day)*	x	x	x	1,082.9	0.84	x		x	x	x	x	x	

(1) Source test results for lead from other glass container furnaces to estimate emissions from this source
(2) Filterable EPA M5 Particulate Matter results from 9/01 stack test added to Condensible EPA Method 202 Particulate Matter results from 9/2001 stack test divided by 7/04 source test results of 0.24 lbs/ton to yield CE of 84%
(3) Filterable EPA M5 Particulate Matter results from 9/01 stack test multiplied by AP-42 emission factor of 91% and added to Condensible EPA Method 202 Particulate Matter results from 9/01 stack test. CE = PM10
(4) No emission factor for ammonia listed in AP-42 or Fire for this SCC code
(5) AVG Control Efficiency = ((hours / yr - hours off-line) / (hours / yr)) * Stack Test Control Efficiency = 8760 - 1.8 = 8758.2 / 8760 = 99.979% x 84% = 83.98%. NOTE: ESP was off line for ~1.8 hrs due to malfunction and/or repairs

14 IN-PROC / NAT.GAS 'A'	Million Cubic Feet Burned	2	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	39000699	ORIGIN OF Emission Factor												(1)	
POINT=	20	Emission Factor													
SEGMENT=	3	E.F. multiplier (%ash or %S)			Emissions included in 14 Furnace 'A'										
Annual Thruput=	333.4	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=|	89.2	EMISSIONS (tons/yr)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=|	92	*Emissions (Lb/Ozone day)*	x	x	x	0.0	0.0	x		x	x	x	x	x	

(1) No emission factor for ammonia listed in AP-42 or Fire for this SCC code

14 A REFINER / FOREHEARTH	Million Cubic Feet Burned	3	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	39000699	ORIGIN OF Emission Factor	AP-42	AP-42	AP-42	AP-42	AP-42				AP-42		AP-42	(1)	
POINT=	20	Emission Factor	7.6	7.6	0.6	100	5.5				84		0.0005		
SEGMENT=	4	E.F. multiplier (%ash or %S)													
Annual Thruput=	40.9	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=|	10.7	EMISSIONS (tons/yr)	0.2	0.2	0.0	2.0	0.1	0.0		0.0	1.7	0.0	0.0	0.0	
Ozone Operating Days=|	92	*Emissions (Lb/Ozone day)*	x	x	x	21.6	0.64	x		x	x	x	x	x	

(1) No emission factor for ammonia listed in AP-42 or Fire for this SCC code
(2) PM-2.5 and PM-10 emission factors include both condensable and filterable forms of PM-2.5 and PM-10

Owens-Brockway Glass Container Inc. - Toano, VA plant - 2008 Emission Statement

Note. Pay fees on pollutants underlined & bold	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl	2nd HAP non-VOC non-PM10	TRS	CO *	LANDFILL TNMOC	Pb	NH3 *	HAP non-VOC non-PM10
FACILITY TOTALS (ton/yr) =	21.4	23.2	267.3	458.9	7.0	1.3		0.0	4.9	0.0	0.0	0.0	
		Ozone\Totals*(lb/day)		2,545.4	39.5								

Instructional comments are attached to cells with red corners.
After 1st year, you may only need to update thruputs (yellow cells), & maybe ozone thruputs & days (blue cells).

* Where appropriate, DEQ will develop estimates for PM-2.5, CO and ammonia using federal emission factors (AP-42 or Fire) if the facility chooses not to address them.

14 FURNACE 'A'	Tons of Glass Produced	1	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	30501402	ORIGIN OF Emission Factor	AP-42 (3)	ST (2)	ST	CEMS	ST				ST		S.T. - Other (1)	(4)	
POINT=	20	Emission Factor	1.35	1.45	2.9		0.003				0.03		0.00169		
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	97,806	AVG. Control Efficiency (%)	84.0%	84.0%									84.0%		
		BASIS for control efficiency													
Ozone Season Thruput=|	25,740	EMISSIONS (tons/yr)	10.6	11.4	141.8	194.6	0.1	0.0		0.0	1.5	0.0	0.0	0.0	
Ozone Operating Days=|	92	*Emissions (Lb/Ozone day)*	x	x	x	1,082.9	0.94	x		x	x	x	x	x	

(1) Source test results for lead from other glass container furnaces to estimate emissions from this source
(2) Filterable EPA M5 Particulate Matter results from 9/01 stack test added to Condensible EPA Method 202 Particulate Matter results from 9/2001 stack test divided by 7/01 source test results of 0.24 lbs/ton to yield CE of 84%
(3) Filterable EPA M5 Particulate Matter results from 9/01 stack test multiplied by AP-42 emission factor of 91% and added to Condensible EPA Method 202 Particulate Matter results from 9/01 stack test. CE = PM10
(4) No emission factor for ammonia listed in AP-42 or Fire for this SCC code
(5) AVG Control Efficiency = ((hours / yr - hours off-line) / (hours / yr)) * Stack Test Control Efficiency = 8760 - 1.8 = 8758.2 / 8760 = 99.979% x 84% = 83.98%. NOTE: ESP was off line for ~1.8 hrs due to malfunction and/or repairs

14 IN-PROC / NAT.GAS 'A'	Million Cubic Feet Burned	2	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	39000699	ORIGIN OF Emission Factor												(1)	
POINT=	20	Emission Factor													
SEGMENT=	3	E.F. multiplier (%ash or %S)			Emissions included in 14 Furnace 'A'										
Annual Thruput=	333.4	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=|	89.2	EMISSIONS (tons/yr)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=|	92	*Emissions (Lb/Ozone day)*	x	x	x	0.0	0.0	x		x	x	x	x	x	

(1) No emission factor for ammonia listed in AP-42 or Fire for this SCC code

14 A REFINER / FOREHEARTH	Million Cubic Feet Burned	3	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	39000699	ORIGIN OF Emission Factor	AP-42	AP-42	AP-42	AP-42	AP-42				AP-42		AP-42	(1)	
POINT=	20	Emission Factor	7.6	7.6	0.6	100	5.5				84		0.0005		
SEGMENT=	4	E.F. multiplier (%ash or %S)													
Annual Thruput=	40.9	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=|	10.7	EMISSIONS (tons/yr)	0.2	0.2	0.0	2.0	0.1	0.0		0.0	1.7	0.0	0.0	0.0	
Ozone Operating Days=|	92	*Emissions (Lb/Ozone day)*	x	x	x	21.7	0.64	x		x	x	x	x	x	

(1) No emission factor for ammonia listed in AP-42 or Fire for this SCC code
(2) PM-2.5 and PM-10 emission factors include both condensable and filterable forms of PM-2.5 and PM-10

Owens-Brockway Glass Container Inc. - Toano, VA plant - 2008 Emission Statement

Note. Pay fees on pollutants underlined & bold	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl	2nd HAP non-VOC non-PM10	TRS	CO *	LANDFILL TNMOC	Pb	NH3 *	HAP non-VOC non-PM10
FACILITY TOTALS (ton/yr) =	**21.4**	**23.2**	**267.3**	**458.9**	**7.0**	**1.3**		**0.0**	4.9	**0.0**	**0.0**	0.0	
			3 Ozone Totals (lb/day)	2,545.4	39.5								

15 FURNACE 'B'	Tons of Glass Produced	4	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	30501402	ORIGIN OF Emission Factor	AP-42 (3)	S T (2)	ST	CEMS	ST				ST		S.T. - Other (1)	(4)	
POINT=	21	Emission Factor	1 36	1.49	2.6		0.004				0 003		0.00169		
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	96,514	AVG. Control Efficiency (%)	84 0%	84 0%									84 0%		
		BASIS for control efficiency													
Ozone Season Thruput=(	25,729	EMISSIONS (tons/yr)	10.5	11.5	125 5	260.4	0 2	0 0		0 0	0.1	0 0	0 0	0 0	
Ozone Operating Days=(	92	*Emissions (Lb Ozone day)*	x	x	x	1,441 3	1 5	x		x	x	x	x	x	

(1) Source test results for lead from other glass container furnaces to estimate emissions from this source

(2) Filterable EPA M5 Particulate Matter results from 9/01 stack test added to Condensible EPA Method 202 Particulate Matter results from 9/2001 stack test divided by 7/04 source test results of 0 24 lbs/ton to yield CE of 84%

(3) Filterable EPA M5 Particulate Matter results from 9/01 stack test multiplied by AP-42 emission factor of 91% and added to Condensible EPA Method 202 Particulate Matter results from 9/01 stack test. CE = PM10

(4) No emission factor for ammonia listed in AP-42 or Fire for this SCC code

(5) AVG Control Efficiency = ((hours / yr - hours off-line) / (hours / yr)) * Stack Test Control Efficiency = 8760 - 1.8 = 8758 2 / 8760 = 99 979% x 84% = 83 98% NOTE: ESP was off line for ~1 8 hrs due to malfunction and/or repairs.

15 IN-PROC / NAT.GAS B'	Million Cubic Feet Burned	5	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No =	39000699	ORIGIN OF Emission Factor													
POINT=	21	Emission Factor													
SEGMENT=	3	E F multiplier (%ash or %S)				Emissions included in 15 Furnace 'B'									
Annual Thruput=	328 5	AVG Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=(	65 5	EMISSIONS (tons/yr)	0.0	0.0	0 0	0.0	0.0	0.0		0 0	0.0	0.0	0 0	0 0	
Ozone Operating Days=(	92	*Emissions (Lb/Ozone day)*	x	x	x	0.0	0 0	x		x	x	x	x	x	

15 B REFINER / FOREHEARTH	Million Cubic Feet Burned	6	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	39000699	ORIGIN OF Emission Factor	AP-42	AP-42	AP-42	AP-42	AP-42				AP-42		AP-42	(1)	
POINT=	21	Emission Factor	7.6	7.6	0 6	100	5.5				84		0.0005		
SEGMENT=	4	E.F. multiplier (%ash or %S)													
Annual Thruput=	37 4	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=(	8 8	EMISSIONS (tons/yr)	0 1	0 1	0 0	1.9	0.1	0 0		0 0	1.6	0.0	0.0	0 0	
Ozone Operating Days=(	92	*Emissions (Lb/Ozone day)*	x	x	x	19.6	0.5	x		x	x	x	x	x	

(1) No emission factor for ammonia listed in AP-42 or Fire for this SCC code

(2) PM-2 5 and PM-10 emission factors include both condensable and filterable forms of PM-2.5 and PM-10

11 SAND UNLOADING	Tons processed	7	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	30501410	ORIGIN OF Emission Factor	Other (1)	AP-42											
POINT=	24	Emission Factor	0.0014	0 0014											
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	114,832	AVG. Control Efficiency (%)	99	99											
		BASIS for control efficiency	D	D											
Ozone Season Thruput=(		EMISSIONS (tons/yr)	0 0	0 0	0 0	0 0	0 0	0.0		0 0	0 0	0.0	0.0	0 0	
Ozone Operating Days=(		*Emissions (Lb Ozone day)*	x	x	x	0 0	0.0	x		x	x	x	x	x	

(1) PM10 assumed to equal PM2 5

Owens-Brockway Glass Container Inc. - Toano, VA plant - 2008 Emission Statement

Note. Pay fees on pollutants underlined & bold	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl	2nd HAP non-VOC non-PM10	TRS	CO *	LANDFILL TNMOC	Pb	NH3 *	HAP non-VOC non-PM10
FACILITY TOTALS (ton/yr) =	21.4	**23.2**	**267.3**	**458.9**	**7.0**	**1.3**		**0.0**	4.9	**0.0**	**0.0**	0.0	
		Ozone Totals (lb/day)		2,545.4	39.5								

12-13 BATCH STOR BINS	Tons processed	8	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No =	30501410	ORIGIN OF Emission Factor	Other (1)	AP-42											
POINT=	25	Emission Factor	0.0014	0.0014											
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	209,298	AVG. Control Efficiency (%)	99	99											
		BASIS for control efficiency	D	D											
Ozone Season Thruput=		EMISSIONS (tons/yr)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=		*Emissions (Lb/Ozone day)*	x	x	x	0.0	0.0	x		x	x	x	x	x	

(1) PM10 assumed to equal PM2.5

16 BOTTLE SURFACE TREAT	Tons processed	10	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No =	30501411	ORIGIN OF Emission Factor					ST (1)	ST (1)							
POINT=	26	Emission Factor					1340	260							
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	9.6	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=	2.5	EMISSIONS (tons/yr)	0.0	0.0	0.0	0.0	6.5	1.3		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=	92	*Emissions (Lb/Ozone day)*	x	x	x	0.0	36.3	x		x	x	x	x	x	

(1) Source test at a similar plant using the MBTT HEST process.

GLASS CRUSHER (Kue-Ken)	Tons Cullet Processed	11	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	30501413	ORIGIN OF Emission Factor	Other (1)	AP-42											
POINT=	27	Emission Factor	0.0024	0.0024											
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	24,222	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=		EMISSIONS (tons/yr)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=		*Emissions (Lb/Ozone day)*	x	x	x	0.0	0.0	x		x	x	x	x	x	

(1) PM10 assumed to equal PM2.5

Owens-Brockway Glass Container Inc. - Toano, VA plant - 2008 Emission Statement

Note. Pay fees on pollutants underlined & bold	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl	2nd HAP non-VOC non-PM10	TRS	CO *	LANDFILL TNMOC	Pb	NH3 *	HAP non-VOC non-PM10
FACILITY TOTALS (ton/yr) =	21.4	**23.2**	**267.3**	**458.9**	**7.0**	**1.3**		**0.0**	4.9	**0.0**	**0.0**	0.0	
		Ozone Totals (lb/day)		2,545.4	39.5								

12-13 BATCH STOR BINS	Tons processed	8	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No =	30501410	ORIGIN OF Emission Factor	Other (1)	AP-42											
POINT=	25	Emission Factor	0.0014	0.0014											
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	209,298	AVG. Control Efficiency (%)	99	99											
		BASIS for control efficiency	D	D											
Ozone Season Thruput=I		**EMISSIONS (tons/yr)**	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=I		*Emissions (Lb/Ozone day)*	x	x	x	0.0	0.0	x		x	x	x	x	x	

(1) PM10 assumed to equal PM2.5

16 BOTTLE SURFACE TREAT	Tons processed	10	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No =	30501411	ORIGIN OF Emission Factor					ST (1)	ST (1)							
POINT=	26	Emission Factor					1340	260							
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	9.6	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=I	2.5	**EMISSIONS (tons/yr)**	0.0	0.0	0.0	0.0	6.5	1.3		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=I	92	*Emissions (Lb/Ozone day)*	x	x	x	0.0	36.31	x		x	x	x	x	x	

(1) Source test at a similar plant using the MBTT HEST process.

GLASS CRUSHER (Kue-Ken)	Tons Cullet Processed	11	PM-2.5 *	PM-10	SO2	NOx	VOC	HCl		TRS	CO *	LANDFILL TNMOC	Pb	Ammonia *	
SCC No. =	30501413	ORIGIN OF Emission Factor	Other (1)	AP-42											
POINT=	27	Emission Factor	0.0024	0.0024											
SEGMENT=	1	E.F. multiplier (%ash or %S)													
Annual Thruput=	24,222	AVG. Control Efficiency (%)													
		BASIS for control efficiency													
Ozone Season Thruput=I		**EMISSIONS (tons/yr)**	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ozone Operating Days=I		*Emissions (Lb/Ozone day)*	x	x	x	0.0	0.0	x		x	x	x	x	x	

(1) PM10 assumed to equal PM2.5

Commonwealth of Virginia
Department of Environmental Quality

Annual Update for Calendar Year: 2008

Registration#: 60923
Plant Name: Owens-Brockway Glass Container
Physical Location: 150 Industrial Boulevard
Mailing Address: 150 Industrial Boulevard
Toano, VA 23168

Region: TRO
County: 095 James City County
Plant ID: 00022
Contact Person: WHITE, Ken
Telephone: (757)566-2408
Employees: 182
Principal Product: glass bottles
SIC: 3221 NAICS: 327213
Inspector: Pinzel, Kenneth
Classification: Major/Potential Major

Summary Data for Calendar Year: ~~2007~~ 2008

Stk	Pt	Seg	Segment Description	SCC	Annual Thrupul	Units	% Sulfur	% Ash	Heat Content (mmbtu/ SCC unit)	% Overall Effic	Primary Control Equip	Secondary Control Equip	% Annual Thrupul: Dec Feb	Mar May	Jun Aug	Sep Nov	Operating Schedule: Hr Dy	Dy Wk	Hr Yr	% Space Heat	Stack Parameters: Ht (ft)	Dia (ft)	Exit Temp (f)	Exit Flow Rate (ACFM)	Plume Ht (ft)	Elevation (ft)
1	20	1	14 FURNACE 'A'	30501402 ~~105341~~ 97,806	Tons of Glass Produced	0	0	0		75 83 4 83 429	011		25	25	25	25	24	7	8760	0	152	3	900	10600		100
											011 = Electrostatic Precipitator - Medium Efficiency															
1	20	3	14 IN PROC/NAT.GAS "A" Emissions included in segment 1	39000699 ~~354.1~~ 333.4	Million Cubic Feet Burned	0	0	1000					25	25	25	25	24	7	8760	0	152	3	900	10600		100
1	20	4	14 A REFINER/FOREHEARTH	39000699 ~~42.1~~ 40.9	Million Cubic Feet Burned	0	0	1038					25	25	25	25	24	7	8760	0	152	3	900	10600		100
2	21	1	15 FURNACE 'B'	30501402 ~~102973~~ 96,514	Tons of Glass Produced	0	0	0		83 4 81 83 429	011		25	25	25	25	24	7	8760	0	152	3	900	10600		100
											011 = Electrostatic Precipitator - Medium Efficiency															
2	21	3	15 IN PROC/NAT GAS "B"	39000699 ~~342.6~~ 328.5	Million Cubic Feet Burned	0	0	1000					25	25	25	25	24	7	8760	0	152	3	900	10600		100
2	21	4	15 B REFINER/FOREHEARTH	39000699 ~~38.8~~ 37.4	Million Cubic Feet Burned	0	0	1000					25	25	25	25	24	7	8760	0	152	3	900	10600		100
3	24	1	11 SAND UNLOADING	30501410 ~~146366~~ 114,832	Tons Processed	0	0	0		99	018		25	25	25	25	24	7	8760	0	50	.8	125	2000		100
											018 = Fabric Filter - Low Temperature i.e. T<180F															
4	25	1	12-13 BATCH STOR BINS	30501410 ~~226891~~ 209,298	Tons Processed	0	0	0		99	018		25	25	25	25	24	7	8760	0	95	1 29	77	465		100
											018 = Fabric Filter - Low Temperature i.e. T<180F															

Commonwealth of Virginia
Department of Environmental Quality

Annual Update for Calendar Year: 2008

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Region: TRO
County: 095 James City County
Plant ID: 00022
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Telephone: (757)566-2408
Employees: 182
Principal Product: glass bottles
SIC: 3221 NAICS: 327213
Inspector: Pinzel, Kenneth
Classification: Major/Potential Major

Summary Data for Calendar Year: ~~2007~~ 2008

Stk	Pt	Seg	Segment Description	SCC	Annual Thruput	Units	% Sulfur	% Ash	Heat Content (mmbtu/ SCC unit)	% Overall Effic	Primary Control Equip	Secondary Control Equip	% Annual Thruput: Dec Feb	Mar May	Jun Aug	Sep Nov	Operating Schedule: Hr Dy	Dy Wk	Hr Yr	% Space Heat	Stack Parameters: Ht (ft)	Dia (ft)	Exit Temp (f)	Exit Flow Rate (ACFM)	Plume Ht (ft)	Elevation (ft)
5	26	1	16 BOTTLE SURFACE TREAT	30501411	~~19.4~~ 9.6	Tons Processed	0	0	0				25	25	25	25	24	7	8760	0			125	2000	20	100
6	27	1	GLASS CRUSHER	30501413	~~29.53~~ 24,222	Tons Cullet Processed	0	0	0				25	25	25	25	24	7	8760	0	43	3.5	77	7000		100

Commonwealth of Virginia
Department of Environmental Quality

Annual Update for Calendar Year: 2008

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Principal Product glass bottles
SIC 3221 NAICS. 327213
Inspector: Pinzal, Kenneth
Classification Major/Potential Major

Summary Data for Calendar Year: ~~2007~~ 2008

Stk	Pt	Seg	Segment Description	SCC	Annual Thruput	Units	% Sulfur	% Ash	Heat Content (mmbtu/ SCC unit)	% Overall Effic	Primary Control Equip	Secondary Control Equip	% Annual Thruput Dec Feb	Mar May	Jun Aug	Sep Nov	Operating Schedule Hr Dy	Dy Wk	Hr Yr	% Space Heat	Stack Parameters Ht (ft)	Dia (ft)	Exit Temp (f)	Exit Flow Rate (ACFM)	Plume Ht (ft)	Elevation (ft)
5	26	1	16 BOTTLE SURFACE TREAT	30501411	~~19.1~~ 9.6	Tons Processed	0	0	0				25	25	25	25	24	7	8760	0			125	2000	20	100
6	27	1	GLASS CRUSHER	30501413	~~28553~~ 24,222	Tons Cullet Processed	0	0	0				25	25	25	25	24	7	8760	0	43	3.5	77	7000		100

Commonwealth of Virginia
Department of Environmental Quality

Annual Update for Calender Year: 2008

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Plant Name: Owens-Brockway Glass Container
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Inspector: Pinzal, Kenneth
Classification: Major/Potential Major

Summary Data for Calendar Year: 2007

Slk	Pt	Seg	Segment Description	SCC	Annual Thruput	Units	% Sulfur	% Ash	Heat Content (mmbtu/ SCC unit)	% Overall Effic	Primary Control Equip	Secondary Control Equip	% Annual Thruput				Operating Schedule			% Space Heat	Stack Parameters					
													Dec Feb	Mar May	Jun Aug	Sep Nov	Hr Dy	Dy Wk	Hr Yr		Ht (ft)	Dia (ft)	Exit Temp (f)	Exit Flow Rate (ACFM)	Plume Ht (ft)	Elevation (ft)

Document Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print) Charles A. Cochrane

Title Plant Manager

Signature _____ Date 4-13-09